AMENDMENTS TO THE CLAIMS

This listing replaces all prior versions and listings of claims in the application.

Listing of Claims

1-28.   (Cancelled)

29.   (Previously Presented) An *in vivo* method of treating a mammalian host capable of generating an immune response, which comprises:

(a)   generating a DNA fragment which expresses an antigenic protein or antigenic protein fragment;

(b)   distributing said DNA fragment on a particle surface, resulting in a particulate polynucleotide;

(c)   inoculating said mammalian host with said particulate polynucleotide by direct injection; and,

(d)   delivering said particulate polynucleotide to the cytoplasm of an antigen presenting cell within said mammalian host, such that said expressed antigenic protein or antigenic protein fragment is presented to the membrane surface of said antigen presenting cell through the MHC class I pathway, wherein said presentation of said antigenic protein or protein fragment elicits an anti-tumor or anti-viral immune response in said host that destroys neoplastic or virally infected cells.

30.   (Original) The method of Claim 29 wherein said mammalian host is a human.

31.   (Original) The method of Claim 30 wherein direct injection is by subcutaneous injection.

32.   (Previously Presented) The method of Claim 31 wherein said DNA fragment expresses a tumor rejection antigen, viral antigen or antigenic protein fragment thereof.

33.   (Cancelled)

34.   (Original) The method of Claim 32 wherein said antigen presenting cell resides within or migrates to the lymphoid tissue of said human host.

35.   (Original) The method of Claim 34 wherein said tumor rejection antigen is selected from the group consisting of MAGE-1 and MAGE 3.

36.   (Original) The method of Claim 34 wherein said tumor rejection antigen is Melan-A.

37.   (Original) The method of Claim 34 wherein said tumor rejection antigen is gp100.

38.   (Original) The method of Claim 34 wherein said tumor rejection antigen is p53.

39.   (Original) The method of Claim 34 wherein said tumor rejection antigen is CEA.

40.   (Original) The method of Claim 34 wherein said tumor rejection antigen is HER2/neu.

41.   (Canceled).

42.   (Original) The method of Claim 34 wherein said viral antigen is Influenza virus nucleoprotein.

43.   (Original) The method of Claim 34 wherein said viral antigen is Hepatitis B surface antigen.

44.   (Previously Presented) An *ex vivo* method of treating a mammalian host capable of generating an immune response, which comprises:

(a)   generating a DNA fragment which expresses an antigenic protein or antigenic protein fragment;

(b)   distributing said DNA fragment on a particle surface, resulting in a particulate polynucleotide;

(c)   delivering said particulate polynucleotide to the cytoplasm of an antigen presenting cell of a mammalian host *in vitro*, such that said expressed antigenic protein or antigenic protein fragment is presented on the membrane surface of said antigen presenting cell through the MHC class I pathway; and,

(d)   inoculating said mammalian host with said antigen presenting cell by direct injection, wherein presentation of said expressed antigenic protein or protein fragment on said antigen presenting cells of said hosts elicits an anti-tumor or anti-viral immune response that destroys neoplastic or virally-infected cells in said host.

45.   (Original) The method of Claim 44 wherein said mammalian host is a human.

46.   (Original) The method of Claim 45 wherein direct injection is by subcutaneous injection.

47.   (Previously Presented) The method of Claim 46 wherein said DNA fragment expresses a tumor rejection antigen, viral antigen or antigenic protein fragment thereof.

48.   (Cancelled)

49.   (Original) The method of Claim 47 wherein said antigen presenting cells resides within or migrates to the lymphoid tissue of said human host.

50.   (Original) The method of Claim 49 wherein said tumor rejection antigen selected from the group consisting of MAGE- 1 and MAGE 3.

51.   (Original) The method of Claim 49 wherein said tumor rejection antigen is Melan-A.

52.   (Original) The method of Claim 49 wherein said tumor rejection antigen is gp 100.

53.   (Original) The method of Claim 49 wherein said tumor rejection antigen is p53.

54.   (Original) The method of Claim 49 wherein said tumor rejection antigen is CEA.

55.   (Original) The method of Claim 49 wherein said tumor rejection antigen is HER2/nue.

56.   (Canceled).

57.   (Original) The method of Claim 49 wherein said viral antigen is Influenza virus nucleoprotein.

58.   (Original) The method of Claim 49 wherein said viral antigen is Hepatitis B surface antigen.

59.   (Previously Presented) An *ex vivo* method of treating a mammalian host capable of generating an immune response, which comprises:

(a)   generating a DNA fragment which expresses a molecule which enhances the antigen presentation function of an APC;

(b)   distributing said DNA fragment on a particle surface, resulting in a particulate polynucleotide;

(c)   delivering said particulate polynucleotide to the cytoplasm of an antigen presenting cell of a mammalian host *in vitro*, such that said antigen presentation enhancing protein is expressed; and,

(d)   inoculating said mammalian host with said antigen presenting cell by direct injection.

60.   (Original) The method of Claim 59 wherein said mammalian host is a human.

61.   (Original) The method of Claim 60 wherein direct injection is by subcutaneous injection.

62.   (Cancelled)

63.   (Original) The method of Claim 61 wherein said antigen presenting cell resides within or migrates to the lymphoid tissue of said human host.

64.   (Previously Presented) The method of Claim 63 wherein said DNA fragment expresses a costimulatory molecule.

65.   (Original) The method of Claim 64 wherein said costimulatory molecule is selected from the group consisting of CD80 and CD86.

66.   (Original) The method of Claim 63 wherein said DNA vector fragment expresses a cytokine molecule.

67.   (Original) The method of Claim 66 wherein said cytokine molecule is selected from the group consisting of IL-12, IL-4 and IL-2.

68.   (Previously Presented)   A method for transfecting an antigen presenting cell comprising:

(a)   distributing a DNA fragment which expresses an antigenic protein or fragment thereof on a particle surface, resulting in a particulate polynucleotide;

(b)   delivering said particulate polynucleotide by direct injection to the cytoplasm of an antigen presenting cell, such that said expressed antigenic protein or fragment thereof is presented to the membrane surface of said antigen presenting cell, whereby presentation of said antigenic protein or protein fragment elicits an anti-tumor or anti-viral immune response in a mammalian host that destroys neoplastic or virally infected cells.

69.   (Previously Presented) The method of Claim 68, wherein said delivering step occurs *in vivo*.

70.   (Previously Presented) The method of Claim 68, wherein said delivering step occurs *in vitro*.

71.   (Previously Presented)   A method of inducing a CTL immune response in a mammalian host capable of generating an immune response, comprising the step of transfecting antigen presenting cells of said host *in vivo* with a DNA fragment which expresses an antigenic protein or fragment thereof by direct injection, such that said antigenic protein or fragment thereof is presented to the membrane surface of said antigen presenting cell through the MHC class I pathway and tumor cells are destroyed.

72.   (Previously Presented)   The method of Claim 29, wherein said direct injection is subcutaneous injection, epidermal injection, dermal injection, lymphatic injection or intravenous injection.

73.   (Previously Presented)   The method of Claim 29, wherein said antigen presenting cell is a dendritic cell, macrophage, a stromal cell, T-lymphocyte or B-lymphocyte.

74.   (Previously Presented)   The method of Claim 73, wherein said antigen presenting cell is a dendritic cell.

75.   (Previously Presented)   The method of Claim 44, wherein said direct injection is subcutaneous injection, epidermal injection, dermal injection, lymphatic injection or intravenous injection.

76.   (Previously Presented)   The method of Claim 44, wherein said antigen presenting cell is a dendritic cell, macrophage, a stromal cell, T-lymphocyte or B-lymphocyte.

77.   (Previously Presented)   The method of claim 76, wherein said antigen presenting cell is a dendritic cell.

78.   (Previously Presented)   The method of claim 59, wherein said direct injection is subcutaneous injection, epidermal injection, dermal injection, lymphatic injection or intravenous injection.

79.   (Previously Presented)   The method of claim 59, wherein said antigen presenting cell is a dendritic cell, macrophage, a stromal cell, T-lymphocyte or B-lymphocyte.

80.   (Previously Presented)   The method of claim 79, wherein said antigen presenting cell is a dendritic cell.

81.   (Previously Presented) The method of Claim 68, wherein said mammalian host is a human.

82.   (Previously Presented) The method of Claim 68, wherein said DNA fragment expresses a tumor rejection antigen, viral antigen or antigenic protein fragment thereof.

83.   (Previously Presented) The method of Claim 81, wherein said antigen presenting cell resides within or migrates to the lymphoid tissue of said human host.

84. (Previously Presented) The method of Claim 68, wherein said antigen presenting cell is a dendritic cell, macrophage, a stromal cell, T-lymphocyte or B-lymphocyte.

85. (Previously Presented) The method of Claim 84, wherein said antigen presenting cell is a dendritic cell.

86. (Previously Presented) The method of Claim 82, wherein said tumor rejection antigen is selected from the group consisting of MAGE-1 and MAGE 3.

87. (Previously Presented) The method of Claim 82, wherein said tumor rejection antigen is Melan-A.

88. (Previously Presented) The method of Claim 82, wherein said tumor rejection antigen is gp100.

89. (Previously Presented) The method of Claim 82, wherein said tumor rejection antigen is p53.

90. (Previously Presented) The method of Claim 82, wherein said tumor rejection antigen is CEA.

91. (Previously Presented) The method of Claim 82, wherein said tumor rejection antigen is HER2/neu.

92. (Canceled).

93. (Previously Presented) The method of Claim 82, wherein said viral antigen is Influenza virus nucleoprotein.

94. (Previously Presented) The method of Claim 82, wherein said viral antigen is Hepatitis B surface antigen.

95.   (Previously Presented)   The method of Claim 68, wherein said direct injection is subcutaneous injection, epidermal injection, dermal injection, lymphatic injection or intravenous injection.

96.   (Previously Presented)   The method of Claim 94, wherein said direct injection is subcutaneous injection.

97.   (Previously Presented)   The method of Claim 71, wherein said mammalian host is a human.

98.   (Previously Presented) The method of Claim 71, wherein said DNA fragment expresses a tumor rejection antigen, viral antigen or antigenic protein fragment thereof.

99.   (Previously Presented)   The method of Claim 96, wherein said antigen presenting cell resides within or migrates to the lymphoid tissue of said human host.

100.   (Previously Presented)   The method of Claim 68, wherein said antigen presenting cell is a dendritic cell, macrophage, a stromal cell, T-lymphocyte or B-lymphocyte.

101.   (Previously Presented)   The method of Claim 99, wherein said antigen presenting cell is a dendritic cell.

102.   (Previously Presented)   The method of Claim 97, wherein said tumor rejection antigen is selected from the group consisting of MAGE-1 and MAGE 3.

103.   (Previously Presented)   The method of Claim 97, wherein said tumor rejection antigen is Melan-A.

104.   (Previously Presented)   The method of Claim 97, wherein said tumor rejection antigen is gp100.

105.   (Previously Presented)   The method of Claim 97, wherein said tumor rejection antigen is p53.

106.   (Previously Presented) The method of Claim 97, wherein said tumor rejection antigen is CEA.

107.   (Previously Presented)   The method of Claim 97, wherein said tumor rejection antigen is HER2/neu.

108.   (Canceled).

109.   (Previously Presented)   The method of Claim 97, wherein said viral antigen is Influenza virus nucleoprotein.

110.   (Previously Presented)   The method of Claim 97, wherein said viral antigen is Hepatitis B surface antigen.

111.   (Previously Presented)   The method of claim 71, wherein said direct injection is subcutaneous injection, epidermal injection, dermal injection, lymphatic injection or intravenous injection.

112.   (Previously Presented)   The method of claim 110, wherein said direct injection is subcutaneous injection.

113.   (New) An *in vivo* method of generating an immune response in a mammalian host capable of generating an immune response comprising:

    (a)   generating a DNA fragment which expresses an antigenic protein or antigenic protein fragment;

    (b)   distributing said DNA fragment on a particle surface, resulting in a particulate polynucleotide;

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(c)   inoculating said mammalian host with said particulate polynucleotide by direct injection; and

(d)   delivering said particulate polynucleotide to the cytoplasm of an antigen presenting cell within said mammalian host, such that said expressed antigenic protein or antigenic protein fragment is presented to the membrane surface of said antigen presenting cell through the MHC class I pathway, wherein said presentation of said antigenic protein or protein fragment elicits an anti-tumor or anti-viral immune response in said host.

114.   (New) An *in vivo* method of treating a mammalian host capable of generating an immune response comprising:

(a)   generating a DNA fragment which expresses an antigenic protein or antigenic protein fragment;

(b)   distributing said DNA fragment on a particle surface, resulting in a particulate polynucleotide;

(c)   inoculating said mammalian host with said particulate polynucleotide by direct injection; and,

(d)   delivering said particulate polynucleotide to the cytoplasm of an antigen presenting cell within said mammalian host, such that said expressed antigenic protein or antigenic protein fragment is presented to the membrane surface of said antigen presenting cell through the MHC class I pathway, wherein said presentation of said antigenic protein or protein fragment elicits an anti-tumor response in said host that destroys neoplastic cells.